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10/600,203	06/20/2003	Grant M. Kloster	42P17058	8820

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EXAMINER
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NGUYEN, KHIEM D

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 07/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/600,203

Applicant(s)

KLOSTER ET AL.

Examiner

Khiem D Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16, 18-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) 18-25 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10-14 and 16 is/are allowed.
- 6) ☒ Claim(s) 1-9, 26, 27 and 29-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Amendment*

Applicant's arguments filed May 10<sup>th</sup>, 2004 have been fully considered but they are not persuasive.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-3 and 5-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakao et al. (U.S. Patent 6,452,650).

In re claim 1, Nakao discloses a method of forming a stacked device filler, comprising (col. 16, line 23 to col. 17, line 13 and **FIGS. 1-42**): forming a layer of first material (polymerizable monomers) (col. 16, lines 65-66) between two substrates (**FIG. 1: 11**) of a stacked device; forming a layer of second material (oligomers or liquid crystals) (col. 16, lines 65-66) between the two substrates of the stacked device, wherein the second material causes a reaction in a portion of the first material (col. 16, line 65 to col. 17, line 13 and **FIGS. 1-3**).

In re claim 2, Nakao discloses wherein the reaction comprises polymerization (col. 16, line 65 to col. 17, line 22 and **FIGS. 1-3**).

In re claim 3, Nakao discloses wherein forming the layer of first material comprises diffusing the first material between a portion of the two substrates (**FIG. 1: 11**) of the stacked device (col. 16, lines 23-34).

In re claim 5, Nakao discloses wherein forming the layer of first material comprises one or more of: injecting the first material between a portion of the two substrates of the stacked device, spraying the first material between the portion of the two substrates of the stacked device, and immersing the two substrates of the stacked device in the first material (col. 16, line 23 to col. 17, line 13).

In re claim 6, Nakao discloses wherein forming the layer of second material comprises diffusing the second material between a portion of the two substrates of the stacked device (col. 17, lines 6-13).

In re claim 7, Nakao discloses wherein the second material is selected from the group consisting of: water, a hydroxyl end-capped oligomer, and a carboxylic acid end-capped polymer (col. 16, line 65 to col. 17, line 13).

In re claim 8, Nakao discloses wherein forming the layer of second material comprises one or more of: injecting the second material between a portion of the two substrates of the stacked device, spraying the second material between the portion of the two substrates of the stacked device, and immersing the two substrates of the stacked device in the second material (col. 17, lines 6-13).

In re claim 9, Nakao discloses wherein the reaction produces a polymer foam (col. 16, line 65 to col. 17, line 23).

2. Claims 26-27, and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakao et al. (U.S. Patent 6,452,650).

In re claim 26, Nakao discloses a method of forming a stacked device filler, comprising (col. 16, line 23 to col. 17, line 13 and **FIGS. 1-42**): forming a layer of material (polymerizable monomers) (col. 16, lines 65-66) between two substrates (**FIG. 1: 11**) of a stacked device; and reacting a portion of the layer of material, wherein the reaction results in the portion of the layer of material increasing in volume (col. 16, line 65 to col. 17, line 13 and **FIGS. 1-3**).

In re claim 27, Nakao discloses wherein the reaction comprises polymerization (col. 16, line 65 to col. 17, line 22 and **FIGS. 1-3**).

In re claim 29, Nakao discloses wherein the reaction produces a polymer foam (col. 16, line 65 to col. 17, line 23).

3. Claims 30, 31, 33, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakao et al. (U.S. Patent 6,452,650).

In re claim 30, Nakao discloses a method comprising (col. 16, line 23 to col. 17, line 13 and **FIGS. 1-42**): depositing a first material (polymerizable monomers) (col. 16, lines 65-66) between two substrates (**FIG. 1: 11**) of a stacked device; depositing a second material (oligomers or liquid crystals) (col. 16, lines 65-66) between the two substrates of the stacked device, wherein a reaction between the first material and the second material fills a portion of the area between the two substrates with a polymer foam as a product of the reaction (col. 16, line 65 to col. 17, line 13 and **FIGS. 1-3**).

In re claim 31, **Nakao** discloses wherein depositing the first material comprises one of: diffusing the first material into a portion of the area between the two substrates; injecting the first material into the portion of the area between the two substrates; spraying the first material into the portion of the area between the two substrates; and immersing the two substrates in the first material (col. 16, line 65 to col. 17, line 13).

In re claim 33, **Nakao** discloses diffusing the second material into a portion of the area between the two substrates; injecting the second material into the portion of the area between the two substrates; spraying the second material into the portion of the area between the two substrates; and immersing the two substrates in the second material (col. 16, line 65 to col. 17, line 13).

In re claim 34, **Nakao** discloses wherein the second material is selected from the group consisting of: water, a hydroxyl end-capped oligomer, and a carboxylic acid end-capped polymer (col. 16, line 65 to col. 17, line 13).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakao et al. (U.S. Patent 6,452,650) in view of Sugino et al. (U.S. Patent 5,087,664).

In re claims 4 and 32, Nakao does not explicitly disclose wherein the material comprises one or more of: diisocyanate monomers, a diisocyanate end-capped compliant oligomer, and p-toluesulfonyl semicabazide.

Sugino discloses providing a first layer of material comprises diisocyanate monomer and a second layer of material wherein the second material causes a reaction in at least a portion of the first layer of material wherein the reaction comprises polymerization (col. 4, line 58 to col. 5, line 4). It would have been obvious to one of ordinary skill in the art of making semiconductor devices to combine the teaching of Nakao and Sugino to enable the polymerization reaction of Nakao be performed and furthermore to provide an undercoating material composed essentially of such a plastisol composition containing an adhesion-imparting agent having good storage stability and being capable of firmly bonding to a electro-deposited metal in a short period of time within a wide temperature range from a relatively low temperature to a high temperature (col. 2, lines 53-51).

***Allowable Subject Matter***

Claim 10-14, and 16 are allowed.

***Response to Amendment***

***Response to Applicant's Arguments***

Applicant's arguments filed May 10<sup>th</sup>, 2004 have been fully considered but they are not persuasive.

Applicants contend that the reference Nakao et al., U.S. Patent 6,452,650 herein known as Nakao does not teach a second material causing a reaction in the first material.

In response to Applicants contention that Nakao does not teach a second material causing a reaction in the first material, Examiner respectfully disagree. Applicants are directed to (col. 16, line 65 to col. 17, line 13) where Nakao discloses a second material (oligomers or liquid crystals) causes a reaction in a portion of the first material (polymerizable monomers) (col. 16, lines 65-66) to produce polymer network type liquid crystal element (col. 17, lines 6-10).

For this reason, examiner holds the rejection proper.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (571) 272-1865. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-3432 for regular communications and (703) 305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.  
July 16, 2004



**W. DAVID COLEMAN**  
**PRIMARY EXAMINER**